

Title (en)

Structures for temperature sensors and infrared detectors having a quantum well structure

Title (de)

Strukturen für Temperatursensoren und Infrarotdetektoren mit Quantumwellstruktur

Title (fr)

Structures pour des capteurs de températures et des détecteurs d'infrarouges avec structure à puits quantiques

Publication

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Application

EP 09162506 A 20090611

Priority

SE 0801498 A 20080625

Abstract (en)

[origin: EP2138817A1] A structure for temperature sensors and infrared detectors built up on a substrate (2), which structure comprises a thermistor layer (3), the resistance of which depends on temperature, and comprising an electrical contact layer (4, 5) on the two sides of the thermistor layer (3), where it is intended that the resistance between these contact layers is to be measured, where the thermistor layer (3) is constituted by a monocrystalline quantum well structure that comprises alternate quantum well layers and barrier layers, where the substrate (2) consists of a disc of silicon, where the quantum well layers consist of silicon-germanium, SiGe, that has been p-doped, and where the barrier layers consist of undoped or low-doped silicon, Si. The invention is characterised in that buffer layers (8, 9) are present between the two said contact layers (4, 5) and the thermistor layer (3), arranged to prevent the contact layers (4, 5) from overfilling the quantum wells in the thermistor layer (3).

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